IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Frank Hundscheidt, et al.	§	Group Art Unit:	2109
Application No:	10/725,714	§	Examiner:	Liu, Lin
Filed:	12/02/2003	§	Confirmation No:	4732

Attorney Docket No: P16614-US1
Customer No.: 27045

For: METHOD FOR OPTIMISING THE DISTRIBUTION OF A SERVICE FROM A SOURCE TO A PLURALITY OF CLIENTS IN A NETWORK

CERTIFICATE OF MAILING OR TRANSMISSION

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Date: January 16, 2009

Melissa Wingo

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313.1450

Dear Sir:

APPEAL UNDER 35 U.S.C. §134

This Brief is submitted in connection with the decision of the Primary Examiner set forth in the Offical Action dated August 18, 2008 (Paper No.: Mail Date 20080802), finally rejecting claims 1-5, 8, 9 and 11-18 which are all of the pending claims in this application.

The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §41.20(b)(2) that may be required by this paper, and to credit any overpayment, to Deposit Account No. 50-1379 .

I. Real Party in Interest

The real party in interest, by assignment, is: Telefonaktiebolaget LM Ericsson (publ), SE-164 83, Stockholm, Sweden.

II. Related Appeals and Interferences

To the best of the knowledge of the undersigned, there are no related appeals and no interferences regarding the above application.

III. Status of Claims.

Claims 1-5, 8, 9 and 11-18 are pending in the present application, each of which are finally rejected and form the basis for this Appeal. Claims 1-5, 8, 9 and 11-18, including all amendments to the claims are attached in the Claims Appendix.

IV. Status of Amendments.

A response was filed October 16, 2008, subsequent to the final rejection dated August 18, 2008 and the argument toward the claim amendments was not entered. The claims set out in the Claims Appendix include all entered amendments.

V. Summary of Claimed Subject Matter.

Claim Element	Specification Reference
1. (Currently Amended) A method for determining locations of service instances for optimising distribution of a service in a Wide Area Network, the service instances each providing the service from a source to a plurality of clients each client having predetermined requirements, wherein said Wide Area Network (WAN) can be modelled by means of a graph, said method comprising steps of:	Throughout the Specification, including: paragraph [0006]
placing a service instance in each leaf in said graph, said each leaf representing a node in the WAN directly connected to the plurality of clients; and	Throughout the Specification, including: Figure 4C

starting from the leaves, for each of the service instances ;	Throughout the Specification, including: the Abstract
checking whether the service instance when placed in a vertex on the next higher level can fulfill the requirements of all clients to be served by said service instance; and	Throughout the Specification, including: the Abstract
depending on the result of the checking step, moving said service instance one level higher to minimize a number of service instances necessary to provide the service to the client	Throughout the Specification, including: the Abstract

Claim Element	**Specification Reference**
8. (Currently Amended) A device for determining locations of service instances for optimising distribution of a service in a Wide Area Network, the service instances each providing the service from a source to a plurality of clients each client having predetermined requirements, wherein said Wide Area Network can be modelled by means of a graph, the device comprising:	Throughout the Specification, including: paragraph [0174].
lodging means, for hosting a service instance;	Throughout the Specification, including: Paragraph [0018].
checking means, for checking whether the service instance when placed in a vertex on the next higher level of the WAN can fulfill the requirements of all clients to be served by said service instance;	Throughout the Specification, including: Paragraph [0176]
processing means, for coordinating said lodging means and said checking means and for controlling said vertex;	Throughout the Specification, including: Paragraph [0020].
means for moving the service instance to minimize a number of service instances necessary to provide the service to the client; and	Throughout the Specification, including:Paragraph [0167]
input/output means, for sending and receiving messages and service instances.	Throughout the Specification, including: paragraph [0021]

Claim Element	**Specification Reference**
11. (Currently Amended) A system for determining locations of service instances for	Throughout the Specification, including: Figure 3 and figures 4a- 4d

optimising distribution of a service in a Wide Area Network, the service instances each providing the service from a source to a plurality of clients each client having predetermined requirements, wherein said Wide Area Network can be modelled by means of a graph, the system comprising:	
means for placing a service instance in each leaf in said graph, said each leaf representing a node directly connected to the plurality of clients;	Throughout the Specification, including: The Abstract.
means for starting with said each leaf and determining whether said service instance, when placed in a vertex on the next higher level, can fulfill the requirements of all clients to be served by said service instance;	Throughout the Specification, including: Paragraph [0032]
in response to an affirmative determination, means for moving said service instance one level higher to minimize a number of service instances necessary to provide the service to the clients.	Throughout the Specification, including: Paragraph [0065] – [0067]

The specification references listed above are provided solely to comply with the USPTO's regulations regarding appeal briefs. The use of such references should not be interpreted to limit the scope of the claims to such references nor to limit the scope of the claimed invention in any manner.

VI. Grounds of Rejection to be Reviewed on Appeal.

a. Issue 1

The first issue presented for this appeal is whether claims 1-4, 8-9, and 11-14 and 16-18 are properly rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ishiguro (Publication no. US 2003/0185397 A1, hereinafter "Ishiguro") in view of Graunke (PGPUB: US2004/0032950A1, hereinafter "Graunke").

b. Issue 2

The second issue presented for this appeal is whether Claims 5 and 15, are properly rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over

Ishiguro (Publication no. US 2003/0185397 A1, hereinafter "Ishiguro") in view of Graunke (PGPUB: US2004/0032950A1, hereinafter "Graunke") and further in view of Moody (Publication no.: US 2005/0005272, hereinafter "Moody").

VII. Argument

a. Claims 1-4, 8-9, and 11-14 and 16-18 are unpatentable over Ishiguro in view of Graunke under 35 U.S.C. § 103(a)

Claims 1-4, 8-9, and 11-14 and 16-18:

In rejecting independent claims 1, 8 and 11 and the respective dependent claims, the Examiner maintains that Ishiguro teaches a method and system of determining locations of service instances for optimizing distribution of a service in a network.

The Applicant respectfully asserts that the Ishiguro prior art reference and the Graunke reference do not establish prima facie obviousness. To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all of the claim limitations (MPEP 2143). In that regard, the Applicant respectfully submits that the Examiner's two references still fail to teach or suggest each and every element of the presently pending independent claims

The Ishiguro reference discloses an information processing apparatus for managing copyrights. The problem to be solved by the Ishiguro reference is that of managing copyrights for content handling devices, typically on the Internet, and to do that for all systems that may be employed for data distribution of copyrighted audio and other content (page 1, para [0006], [0008]). Ishiguro discloses managing keys of devices and licenses. "The keys make up a hierarchical tree structure..."; "keys are generated to represent 16 devices or licenses..."; and each key is defined so as to correspond with each of the nodes...constituting the tree structure." (page 7, para. [0142], [0143]). Licenses are made to correspond with keys that represent nodes (page

8, para. [0147]) and each of the nodes is matched with a given category of devices, e.g., Memory Stick and devices for receiving digital broadcasts (page 8, para. [0146]). The Ishiguro reference also discloses providing a content licensing key in as many nodes as possible (page 8, para. [0147]).

The Ishiguro reference does not disclose a Wide Area Network nor does Ishiguro disclose repositioning service instances. The Graunke reference is cited for teaching managing digital content copyrights over a Wide Area Network (WAN).

As recited in claim 1, the Applicant's invention optimizes (intelligently positions) service distribution in a Wide Area Network (WAN) by modelling the placement of service instances in the WAN through use of a tree graph (preamble to claim 1). A service instance is an entity such as a proxy server in the Internet or in a telecom network that can provide a service to a client. Clients of a service may be, for example, access networks or access nodes or user terminals. In order to optimize service distribution throughout the WAN, service instances are allocated to leaves in the tree graph. Some service instances may be combined in one leaf and the goal is to determine the minimum number of service instances that can reliably serve clients in the WAN (Abstract).

An optimized number of service instances are determined by checking whether moving a particular service instance from one level of the tree graph to a higher level (through modelling in the tree graph) is capable of completely serving all the clients that are made possible by the move (para. [0032]). The optimizing step reduces the number of service instances in the nodes in the WAN; this process being in direct contrast to the function of the Ishiguro reference whose stated goal is that of increasing the number of locations for keys (page 8, para. [0147]).

The Examiner appears to equate a key (Ishiguro) with a service instance in the Applicant's invention. This is incorrect. The key in Ishiguro contains a license and device ID. The service instance is a copy of an application or service that can supply a service to a client. The Applicant re-positions service instances into nodes that will allow a service instance to provide the same services to more clients by minimizing the number of service instances necessary to provide those services to the clients. As

opposed to the limitations of claim 1, Ishiguro manages keys that are located in nodes by adding keys to additional nodes.

If the Applicant's process were applied to the Ishiguro function the exact opposite of Ishiguro's intention would result, the number of keys and nodes would reduce. The purpose and method of the Applicant's invention is to reduce the number of nodes carrying service instances in a network.

Ishiguro does not disclose optimizing the number of service instances in a Wan network and Graunke is cited to supply that missing limitation. So, even if the Ishiguro and Graunke references were combined and applied to the Applicant's invention, the result would be failure of the stated purpose of the Ishiguro reference.

b. Claims 5 and 15 are unpatentable over Ishiguro in view of Graunke and further inview of Moody under 35 U.S.C. § 103(a):

Claims 5 and 15:

The Examiner maintains that claims 5 and 15 are unpatentable over the Ishiguro reference in view of the Graunke and Moody references. The Moody reference is cited for teaching the use of a Petri net analysis. However, Moody lacks the limitations that are also lacking in the Ishiguro and Graunke references.

As stated above, the prior art references must teach or suggest all of the claim limitations (MPEP 2143). In that regard, the Applicant respectfully submits that the Examiner's three references still fail to teach or suggest each and every element of the presently pending independent claims.

In the Applicant's claimed invention, as recited in the claims, a service instance provides a service from a source to a plurality of clients (Abstract). Ishiguro merely discloses the management of keys that contain license and device IDs and utilizes a tree structure to locate the keys. Keys are not service instances and a person skilled in the art would not consider the keys disclosed in the Ishiguro reference as such. The method of the Applicant's invention minimizes the number of service instances in a WAN as claimed. Both the Ishiguro and Graunke reference fail to disclose at least service instances and the optimizing of the number of the service instances.

The addition of Moody does not make up the missing elements. Moody teaches the use of Petri net analysis for a checking step. Discrete event systems (DES) are disclosed as being modeled using Petri net analysis. However, the Moody reference does not disclose optimizing service instances in a WAN. Claim 5 depends from amended claim 1 and claim 15 depends from amended claim 11; both reciting further limitations in combination with the novel elements of claim 11. Thus Ishiguro, Graunke and Moody, individually or in combination, do not disclose all of the elements of independent claims 5 and 15. The allowance of claims 5 and 15 is respectfully requested.

Respectfully submitted,

Date: January 16, 2009

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VIII. Claims Appendix.

1. (Previously Presented) A method for determining locations of service instances for optimising distribution of a service in a Wide Area Network, the service instances each providing the service from a source to a plurality of clients each client having predetermined requirements, wherein said Wide Area Network (WAN) can be modelled by means of a graph, said method comprising steps of:

placing a service instance in each leaf in said graph, said each leaf representing a node in the WAN directly connected to the plurality of clients; and

starting from the leaves, for each of the service instances:

checking whether the service instance when placed in a vertex on the next higher level can fulfil the requirements of all clients to be served by said service instance; and

depending on the result of the checking step, moving said service instance one level higher to minimize a number of service instances necessary to provide the service to the clients.

2. (Previously Presented) A method according to claim 1, further comprises the steps of determining that at least two service instances meet in said vertex and combining said service instances into one service instance.

3. (Previously Presented) A method according to claim 1, further comprises a step, prior to said placing step, of determining levels in said graph.

4. (Previously Presented) A method according to claim 1, wherein said checking step comprises a table-based analysis step.

5. (Previously Presented) A method according to claim 1, wherein said checking step comprises a Petri net analysis step.

6-7. (Cancelled)

8. (Previously Presented) A device for determining locations of service instances for optimising distribution of a service in a Wide Area Network, the service instances each providing the service from a source to a plurality of clients each client having predetermined requirements, wherein said Wide Area Network can be modelled by means of a graph, the device comprising:

lodging means, for hosting a service instance;

checking means, for checking whether the service instance when placed in a vertex on the next higher level of the WAN can fulfil the requirements of all clients to be served by said service instance;

processing means, for coordinating said lodging means and said checking means and for controlling said vertex;

means for moving the service instance to minimize a number of service instances necessary to provide the service to the client; and

input/output means, for sending and receiving messages and service instances.

9. (Previously Presented) A device according to claim 8, further comprises combining means, for determining that at least two service instances meet in said vertex and for combining said service instances into one service instance.

10. (Cancelled)

11. (Previously Presented) A system for determining locations of service instances for optimising distribution of a service in a Wide Area Network, the service instances each providing the service from a source to a plurality of clients each client having predetermined requirements, wherein said Wide Area Network can be modelled by means of a graph, the system comprising:

means for placing a service instance in each leaf in said graph, said each leaf representing a node directly connected to the plurality of clients;

means for starting with said each leaf and determining whether said service instance, when place in a vertex on the next higher level, can fulfill the requirements of all clients to be served by said service instance;

in response to an affirmative determination, means for moving said service instance one level higher to minimize a number of service instances necessary to provide the service to the clients.

12. (Previously Presented) The system of claim 11 further comprises means for determining that at least two service instances meet in said vertex and further combing said two service instances into one service instance.

13. (Previously Presented) The system of claim 11 further comprises means for determining levels in said graph prior to placing said service instance in said each leaf in said graph.

14. (Previously Presented) The system of claim 11 wherein said means for determining further comprises a table-based analysis means.

15. (Previously Presented) The system of claim 11 wherein said means for determining further comprises a Petri net analysis means.

16. (Previously Presented) The method of claim 1, wherein the Wide Area Network is a telecommunications network.

17. (Previously Presented) The device of claim 8, wherein the Wide Area Network is a telecommunications network.

18. (Previously Presented) The system of claim 11, wherein the Wide Area Network is a telecommunications network.

IX. Evidence Appendix.

NONE

X. Related Proceedings Appendix.

NONE